



Complete Summary

TITLE

Management of type 2 diabetes mellitus: frequency of low-density lipoprotein (LDL)-cholesterol values in adult patients with diabetes by category: less than 100 mg/dL, 100 to 130, greater than 130, incalculable, untested.

SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Management of type 2 diabetes mellitus. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2005 Nov. 79 p. [113 references]

Measure Domain

PRIMARY MEASURE DOMAIN

Outcome

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

SECONDARY MEASURE DOMAIN

Does not apply to this measure

Brief Abstract

DESCRIPTION

This measure is used to assess the frequency of low-density lipoprotein (LDL)-cholesterol values in adult patients with diabetes by category: less than 100 mg/dL, 100 to 130, greater than 130, incalculable, untested.

RATIONALE

The priority aims addressed by this measure are to decrease the percentage of patients with diabetes with poorly controlled cardiovascular risk factors and to increase the percentage of patients with diabetes age 18 to 75 for whom the recommended screening frequency of receiving a lipid profile in the last 12 months and the ideal treatment goal of low-density lipoprotein (LDL) less than 100 mg/dL are met.

PRIMARY CLINICAL COMPONENT

Diabetes mellitus; low-density lipoprotein (LDL)-cholesterol

DENOMINATOR DESCRIPTION

Number of adult patients with diabetes mellitus who had an encounter in the last month. Two options for defining the denominator are listed in the related "Denominator Inclusions/Exclusions" field of the Complete Summary.

NUMERATOR DESCRIPTION

For patients with diabetes from the denominator, the number with the value of the most recent low-density lipoprotein (LDL)-cholesterol test performed within the last 12 months by the following categories:

- a. Less than 100
- b. 100 to 130
- c. Greater than 130
- d. Untested in the last 12 months*
- e. Incalculable*

*Note: It is understood that some data systems do not separate these two categories. While not preferable, it may be necessary to combine these two categories.

Evidence Supporting the Measure

EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence

NATIONAL GUIDELINE CLEARINGHOUSE LINK

- [Management of type 2 diabetes mellitus.](#)

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Unspecified

State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Internal quality improvement

Application of Measure in its Current Use

CARE SETTING

Physician Group Practices/Clinics

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Group Clinical Practices

TARGET POPULATION AGE

Age 18 to 75 years

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

Unspecified

ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

BURDEN OF ILLNESS

- Seventy to seventy-five percent of adult patients with diabetes die of macrovascular disease--specifically coronary, carotid and/or peripheral vascular disease.
- Dyslipidemia is a known risk factor for macrovascular disease.
- Small density low-density lipoprotein (LDL)-cholesterol (more atherogenic) particles are increased in type 2 diabetes, and LDL-cholesterol itself may differ in people with diabetes compared with people without diabetes. Patients with diabetes develop more atherosclerosis than patients without diabetes with the same quantitative lipoprotein profiles.

EVIDENCE FOR BURDEN OF ILLNESS

Institute for Clinical Systems Improvement (ICSI). Management of type 2 diabetes mellitus. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2005 Nov. 79 p. [113 references]

UTILIZATION

Unspecified

COSTS

Unspecified

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

Number of adult patients with diabetes mellitus who had an encounter in the last month. Two options for defining the denominator are listed in the "Denominator Inclusions/Exclusions" field.

It is understood that many medical groups will not have electronic access to an integrated database containing both visit data and lab data. In this case, manual identification of at least 20 patients meeting the denominator definition will be necessary and the low-density lipoprotein (LDL)-cholesterol values collected from the medical record.

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions

Number of adult patients with diabetes mellitus who had an encounter in the last month. Two options for defining the denominator are listed below:

- Definition 1

Patients 18 years or older with a primary, secondary, or tertiary diagnosis of diabetes (International Classification of Diseases, Ninth Revision [ICD-9] code 250.xx). Established patients with diabetes should be included. This requires both a visit in the target month AND a diabetic visit in a window of 12 to 24 months before the target month. Both types 1 and 2 are included*.

- Definition 2

Patients ages 18 to 75 continuously enrolled for the last 12 months AND

- a. two or more ambulatory visits or one acute inpatient or emergency room visit with a primary or secondary diagnosis of diabetes* in the last 12 months: 250.xx, 362.0x (diabetic retinopathy), 366.41 (diabetic cataract), 357.2x (polyneuropathy in diabetes), or 648.0 (pregnancy excludes gestational diabetes), OR
- b. one or more prescriptions for insulin in the last 12 months (coding is available on disk from either Institute for Clinical Systems Improvement [ICSI] or from the National Committee for Quality Assurance [NCQA] Web site [NCQA.org]): regular insulin, NPH, Lente**, Lispro, Humulin, 70/30, 75/25, 50/50, Novolin, Ultralente**, Glargine, Aspart, Multiple Daily Injections or Continuous Subcutaneous Infusion of Insulin, Insulin Pump, Insulin Pen, Semilente, Novolin, Penfill, Velosulin, Humalog, OR
- c. one or more prescriptions for oral agents in the last 12 months (coding is available on disk from either ICSI or from the NCQA.org Web site): Acarbose, Miglitol/Glycet, Amaryl, Diabeta, Diabinese, Glimepiride, Glipizide, Glipizide XL, Glucophage, Glucotrol, Glucotrol XL, Glyburide, Glynase, Metformin, Micronase, Prandin, Starlix, Glucovance, Repaglinide, Precose, Tolazamide, Tolamide, Tolbutamide, Tolinase, Rosiglitazone, Pioglitazone.

*Note: Both types 1 and 2 are included in both measures listed here, while the guideline (Refer to the related National Guideline Clearinghouse [NGC] summary of the Institute for Clinical Systems Improvement [ICSI] guideline [Management of Type 2 Diabetes Mellitus](#).) is focused on type 2 diabetes. The inclusion of type 1 diabetes in the measures is for administrative ease, as many medical groups will not be able to determine this relatively small percentage of patients with type 1 diabetes from standard coding.

**Note: According to the guideline (Refer to the related NGC summary of the ICSI guideline [Management of Type 2 Diabetes Mellitus](#).), Lente and Ultralente are no longer being manufactured.

Exclusions

Unspecified

DENOMINATOR (INDEX) EVENT

Clinical Condition
Encounter
Therapeutic Intervention

DENOMINATOR TIME WINDOW

Time window precedes index event

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions

For patients with diabetes from the denominator, the number with the value of the most recent low-density lipoprotein (LDL)-cholesterol test performed within the last 12 months by the following categories:

- a. Less than 100
- b. 100 to 130
- c. Greater than 130
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- e. Incalculable*

*Note: It is understood that some data systems do not separate these two categories. While not preferable, it may be necessary to combine these two categories.

Exclusions
Unspecified

NUMERATOR TIME WINDOW

Fixed time period

DATA SOURCE

Administrative data
Laboratory data
Medical record

LEVEL OF DETERMINATION OF QUALITY

Not Individual Case

OUTCOME TYPE

Clinical Outcome

PRE-EXISTING INSTRUMENT USED

Unspecified

Computation of the Measure

SCORING

Frequency Distribution

INTERPRETATION OF SCORE

Better quality is associated with a score falling within a defined interval

ALLOWANCE FOR PATIENT FACTORS

Unspecified

STANDARD OF COMPARISON

Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

Unspecified

Identifying Information

ORIGINAL TITLE

Frequency of LDL-cholesterol values in adult patients with diabetes by category: less than 100 mg/dL, 100-130, greater than 130, incalculable, untested.

MEASURE COLLECTION

[Management of Type 2 Diabetes Mellitus Measures](#)

DEVELOPER

Institute for Clinical Systems Improvement

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2003 Nov

REVISION DATE

2005 Nov

MEASURE STATUS

This is the current release of the measure.

This measure updates a previous version: Institute for Clinical Systems Improvement (ICSI). Management of type 2 diabetes mellitus. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2004 Nov. 70 p.

SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Management of type 2 diabetes mellitus. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2005 Nov. 79 p. [113 references]

MEASURE AVAILABILITY

The individual measure, "Frequency of LDL-cholesterol values in adult patients with diabetes by category: less than 100 mg/dL, 100-130, greater than 130, incalculable, untested," is published in "Health Care Guideline: Management of Type 2 Diabetes Mellitus." This document is available from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](#).

For more information, contact ICSI at, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; phone: 952-814-7060; fax: 952-858-9675; Web site: www.icsi.org; e-mail: icsi.info@icsi.org.

NQMC STATUS

This NQMC summary was completed by ECRI on July 6, 2004. This NQMC summary was updated by ECRI on January 31, 2005 and again on December 30, 2005.

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